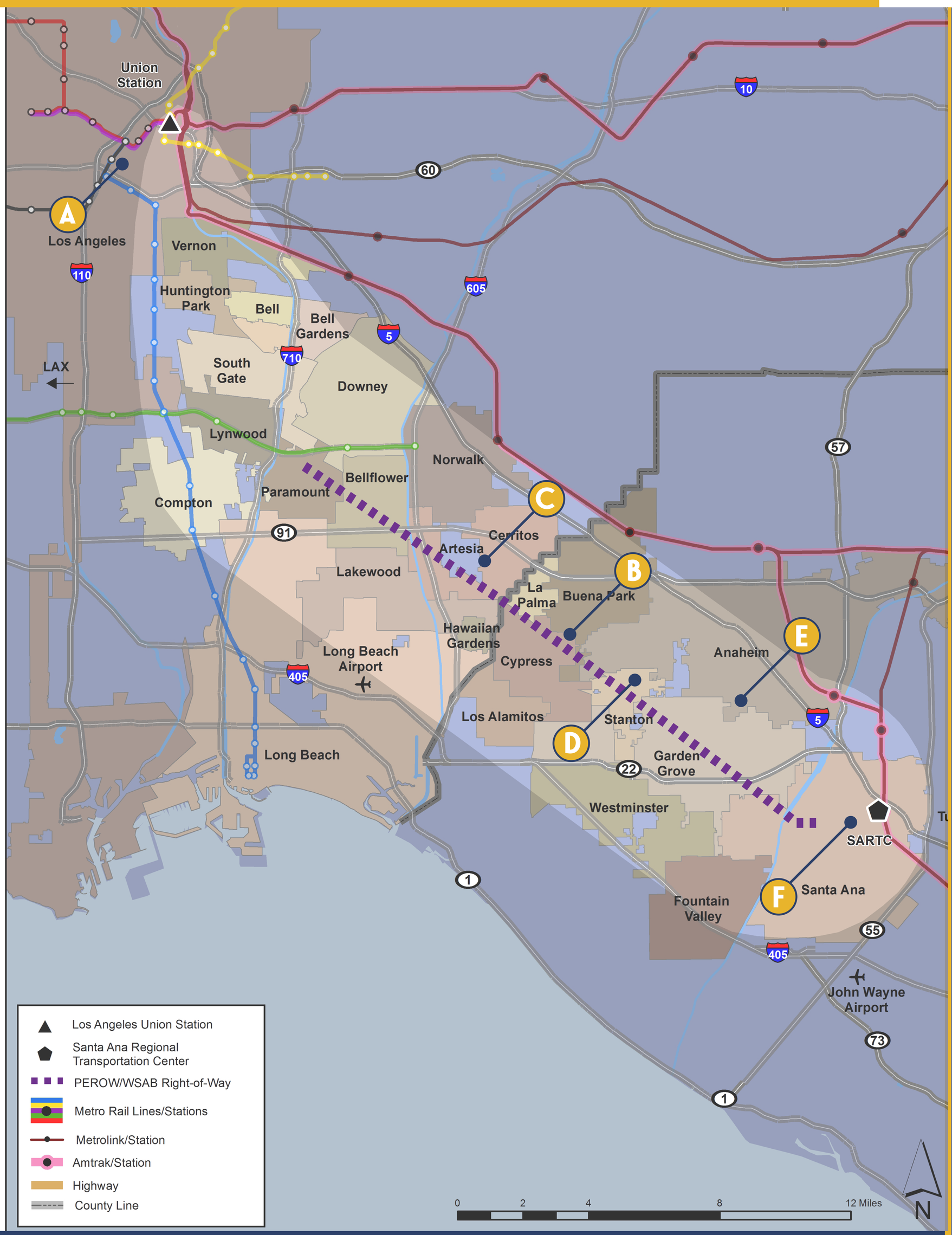
1 THE CORRIDOR TODAY

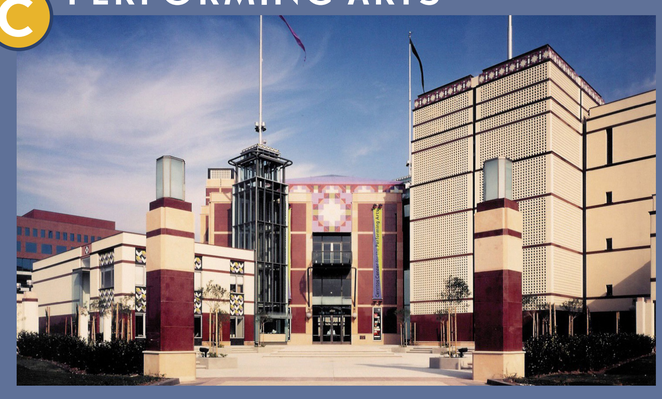
SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS



A DOWNTOWN L.A.

B CYPRESS COLLEGE

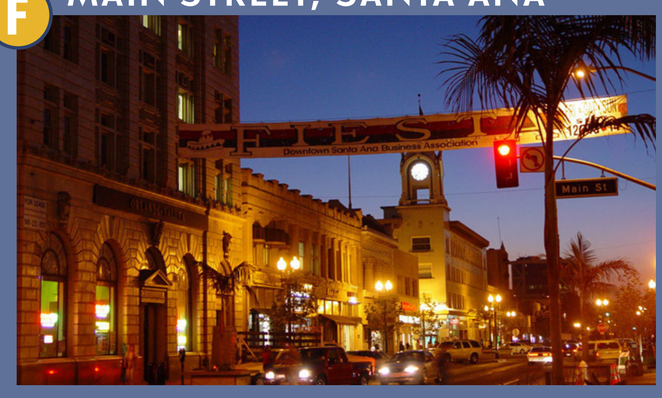
C CERRITOS CENTER FOR THE PERFORMING ARTS



D STANTON FARMERS' MARKET

E RESIDENTIAL

F MAIN STREET, SANTA ANA



- Home to 4.5 million residents and 2.2 million jobs
- Future growth of 550,000 new residents and 86,000 new jobs
- Growth will result in 2.6 million more daily trips in the Corridor
- More than 90% of Corridor travel to work is by car
- Few connections to regional transit system
- Majority of Corridor's freeway and highway system operates at or beyond capacity in peak periods today and in future

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PACIFIC ELECTRIC CORRIDOR

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2 THE CORRIDOR IN 2035

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Future transportation projects will expand the region's transit system. The Corridor project can connect to the regional system, creating more travel options.

N

0 2.5 5 10 15 Miles

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3 WHY THIS CORRIDOR?

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

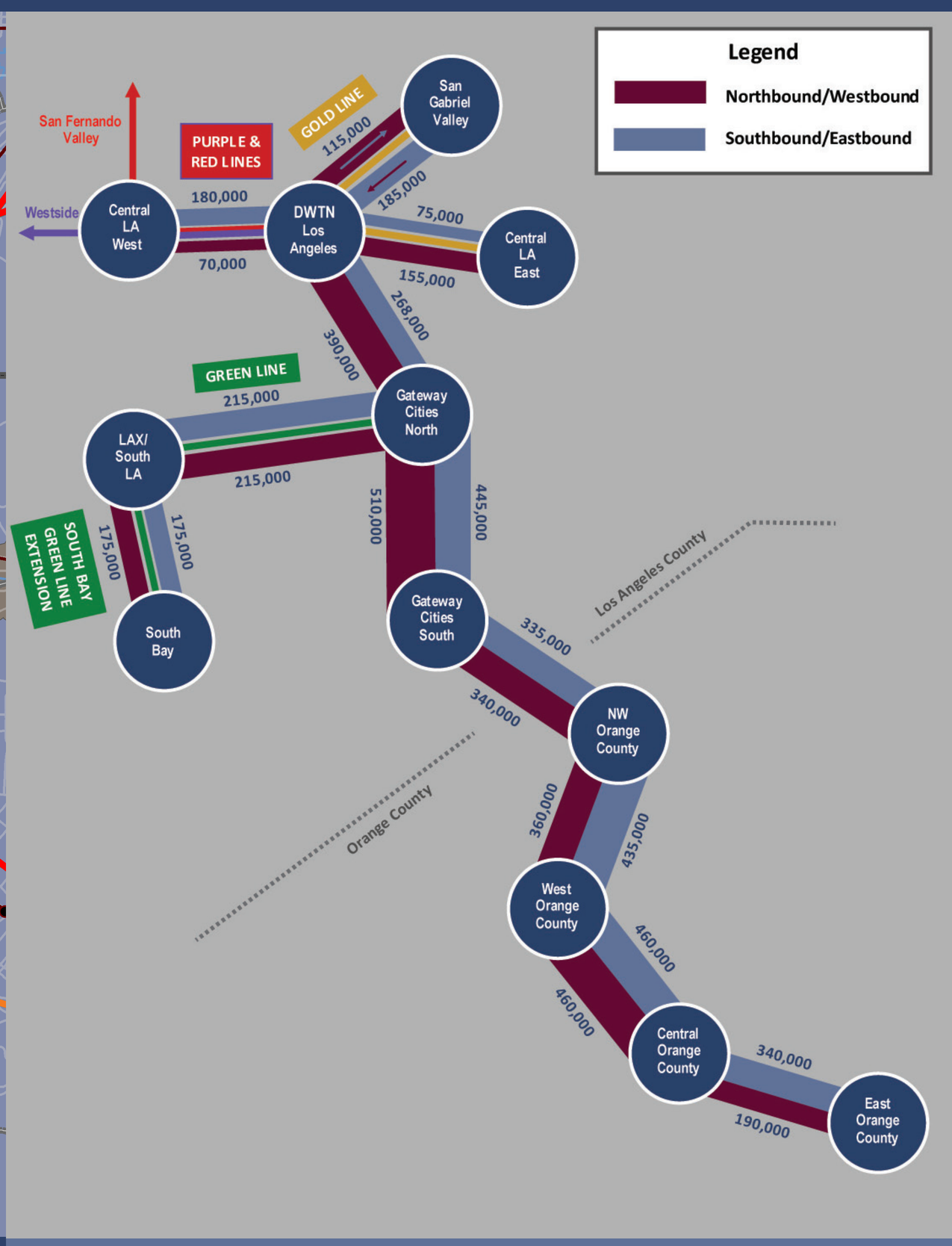
In 2035, the PEROW/WSAB Corridor will be:

- **Home to more than 5.0 million people –** four times the population of San Diego
- **Major employment destination with 2.3 million jobs –** three times San Diego's total employment

The magnitude and nature of the Corridor's growth trends will result in transportation challenges:

- **Increasing travel –** More than 12.8 million additional daily trips
- **Continuing highway system congestion –** 75 percent or more of the Corridor's freeway system will operate at or beyond capacity in both peak periods
- **Changing employment access needs –** The Los Angeles County portion will continue losing manufacturing jobs, while the Orange County section will attract a growing number of jobs.
- **Limited travel choices –** Corridor residents must choose between the automobile and bus travel.
- **Weak connections –** To/from the Corridor to the rest of the region and regional transit system.
- **Growing transit-dependent population –** With a high percentage (36 percent) of low-income households, the forecast shift in jobs, and the aging population, an increasing number of the Corridor's residents will need to rely on transit in the future.

FREEWAY LEVEL OF SERVICE (2035)



TOTAL DAILY TRIPS (2035)

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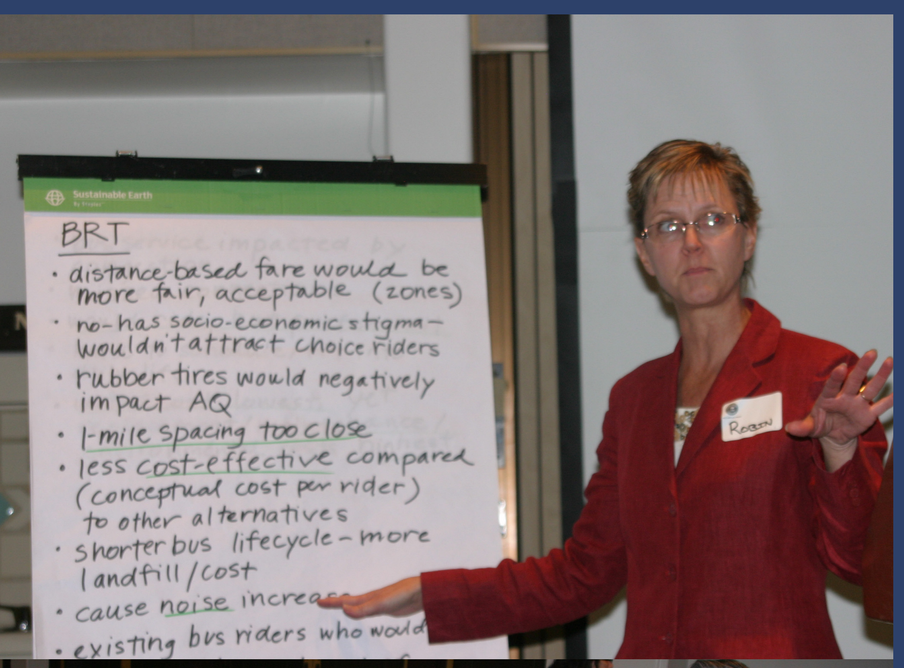
4 WHAT WE HEARD FROM YOU

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

COMMUNITY AND STAKEHOLDER INPUT HAS SHAPED THE CORRIDOR STUDY PROCESS.

Major project themes heard during outreach efforts included:

- Current and future traffic congestion will constrain car travel, and there is limited ability to expand the highway system.
- Current bus transit does not adequately serve Corridor transportation needs, and was viewed as inconvenient and inefficient.
- Enthusiasm for providing high capacity, high speed transit in the Corridor.
- Interest in opportunities for transit-related development and neighborhood revitalization.
- Widespread support for a linear pedestrian and bicycle trail.



Major alternative-specific comments were:

- The No Build Alternative was preferred by some northern Orange County residents living along the PEROW/WSAB Corridor ROW.
- Bus Rapid Transit (BRT) was seen as a pragmatic and sensible solution, but community members doubted its efficiency without dedicated lanes beyond the PEROW/WSAB Corridor ROW.
- Although not widely considered a right fit for the Corridor due to its slow travel speed, Street Car service was viewed favorably.
- Strong support was expressed for Light Rail Transit (LRT) based on its ability to provide both local and regional service for Corridor communities.
- Some interest in a Low Speed Maglev option that would provide cutting-edge, clean and quiet service, while others expressed concerns that the technology was unproven in the U.S. and incompatible with existing transit systems.

5 FINAL SET OF ALTERNATIVES

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

The Final Set of Alternatives was identified through input from:

- Project Advisory Committees
- Elected Official and Stakeholder Briefings
- City and Agency Communications
- Community Meetings
- Community and Stakeholder Groups
- Public Comments

FINAL SET OF ALTERNATIVES

The following alternatives will be studied further:

- NO BUILD
- TRANSPORTATION SYSTEMS MANAGMENT
- BUS RAPID TRANSIT
- STREET CAR
- LIGHT RAIL TRANSIT
- LOW SPEED MAGLEV

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6 NO BUILD ALTERNATIVE

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IMPLEMENT IMPROVEMENTS WITH PLANNED / PROGRAMMED FUNDING

Represents the Study Area in 2035, if no Corridor transportation improvements are approved and built.
Includes committed highway and transit projects identified in:

- SCAG 2008 Regional Transportation Plan (RTP)
- LACMTA 2009 Long Range Transportation Plan (LRTP)
- OCTA 2010 Long Range Transportation Plan (LRTP)

Represents the baseline against which the other alternatives will be evaluated

Both Counties Los Angeles County Project Orange County Project

HIGH-SPEED RAIL
Los Angeles/Anaheim Corridor

TRANSIT PROJECTS
Exposition Transit Corridor Phase 2
Crenshaw/LAX LRT Transit Corridor
Airport Metro Connector
South Bay Metro Green Line Extension
Regional Connector
Westside Subway Extension
Anaheim Fixed Guideway Project
Santa Ana/Garden Grove Fixed Guideway Project
Metrolink – High Frequency Service
Metrolink Station Improvements
Regional Gateways

HIGHWAY PROJECTS
I-5 Mixed Flow and Carpool Lanes (I-605 to OC line)
I-5 Carmenita Road Interchange Improvement
I-710 South and/or Early Action Projects
I-605 "Hot Spots" Interchange Projects
I-5 Improvements (SR-55 to SR-57)
I-605 Key Intersection and Arterial Connections
Countywide Signal Synchronization Network Plan

GOODS MOVEMENT
BNSF Grade Separations in Gateway Cities

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7 TSM ALTERNATIVE

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

MAXIMIZE USE OF EXISTING AND PLANNED SYSTEM

The Transportation System Management (TSM) Alternative maximizes the use and effectiveness of the existing and planned Corridor transportation system. It includes:

- All of the projects identified for the No Build Alternative; and
- Lower capital cost Corridor projects identified with Metro and OCTA staff.

Represents the baseline against which the other "Build" or "provide new improvements" will be evaluated.

Los Angeles County Project Orange County Project

NEW BUS SERVICES

- Metro limited stop service Union Station-Los Cerritos Center (Metro and OCTA bus transfer point)
- Long Beach Transit service Green Line Lakewood Boulevard Station-Downtown Long Beach
- Three OCTA BRT Lines: Beach Boulevard, Katella Avenue, and Edinger Avenue
- Long Beach Transit express bus service on SR-22 from South Coast Plaza-Long Beach Transit Mall/Blue Line
- Long Beach Transit express bus service using I-405 HOV Lanes from South Coast Plaza-Long Beach Transit Mall/Blue Line

BUS SERVICE UPGRADES

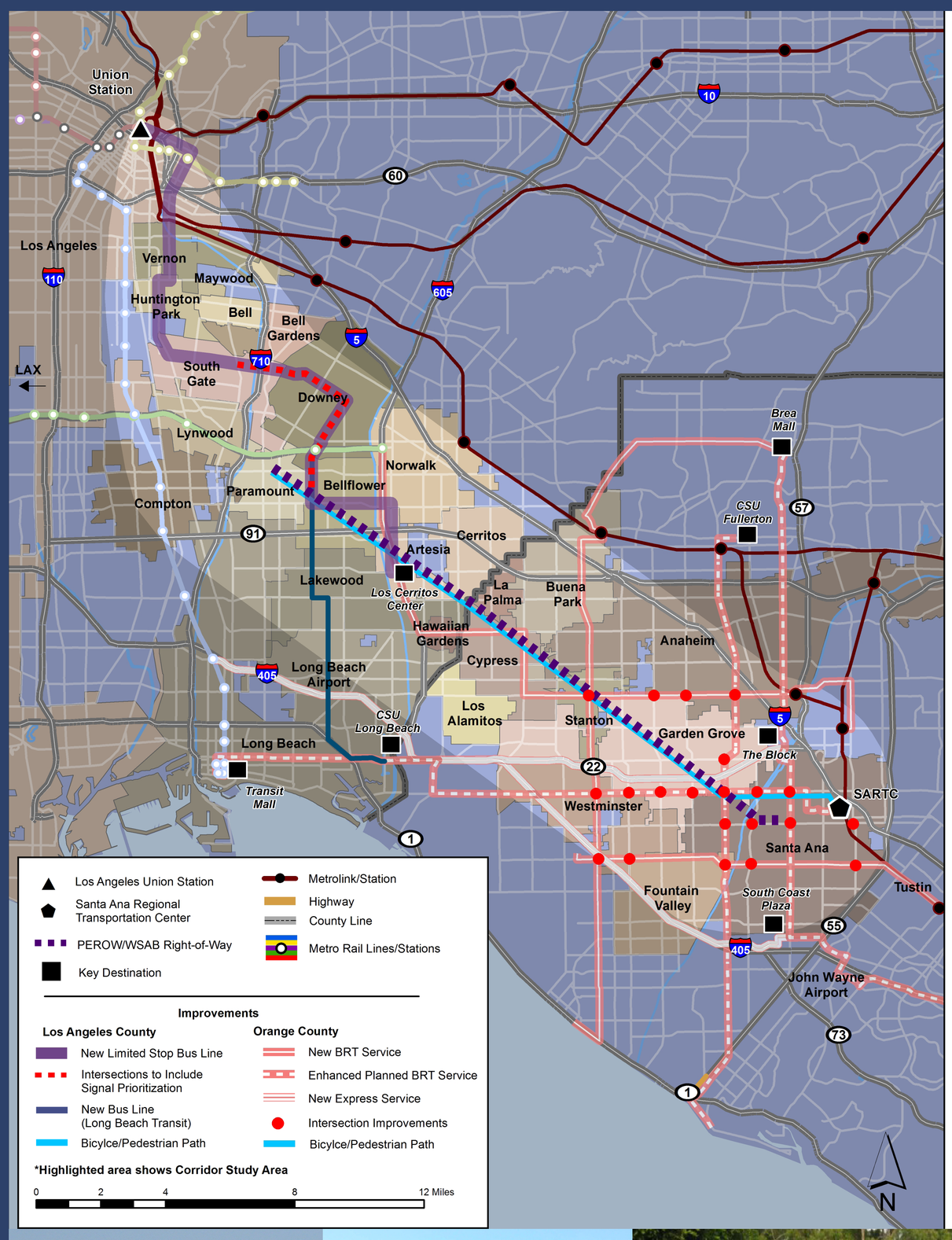
- Support new limited stop service with extension of bus signal priority system
- Enhance BRT service with transit signal priority, queue jumpers, and real-time messaging on:
  - Westminster Boulevard-17th Street
  - Bristol Street-College Boulevard
  - Harbor Boulevard

ARTERIAL/INTERSECTION PROJECTS

- Optimize operations at 21 intersections along six major street corridors adjacent to the Pacific Electric ROW:
  - Katella Avenue to I-5 (four intersections)
  - Harbor Boulevard to SR-22 (two intersections)
  - Westminster Blvd./17th Street to I-5 (two intersections)
  - Westminster Blvd./17th Street to SR-22 (four intersections)
  - 1st Street to SR-22 and I-5 (four intersections)
  - Edinger Avenue to I-405 and I-5 (five intersections)

BICYCLE/PEDESTRIAN PATHS

- Bicycle/pedestrian path along West Santa Ana Branch (WSAB) ROW (8 miles)
- Bicycle/pedestrian path along Pacific Electric ROW Coyote Creek Bike Path-Raitt Street (10.5 miles)
- Bicycle/pedestrian path on city streets from Raitt Street-Santa Ana RTC (4.5 miles)



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8 BRT ALTERNATIVE

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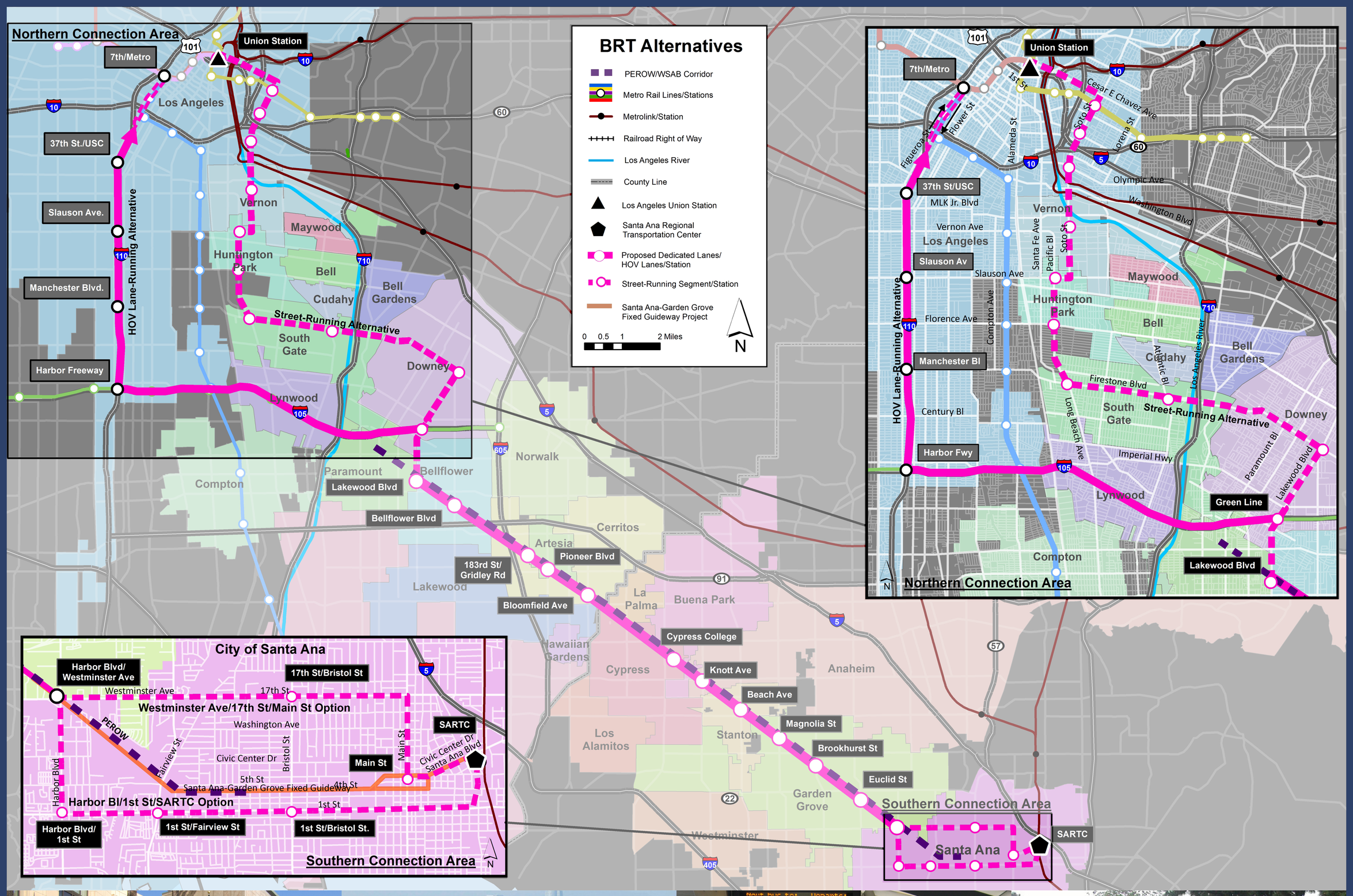
HIGH CAPACITY, HIGH SPEED BUS SERVICE SIMILAR TO METRO ORANGE LINE

Two options were studied

- HOV Lane-Running Option – similar to Metro Silver Line
- Street-Running Option – similar to Metro Rapid lines and OCTA BRT service



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9 GUIDEWAY ALTERNATIVES

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STREETCAR

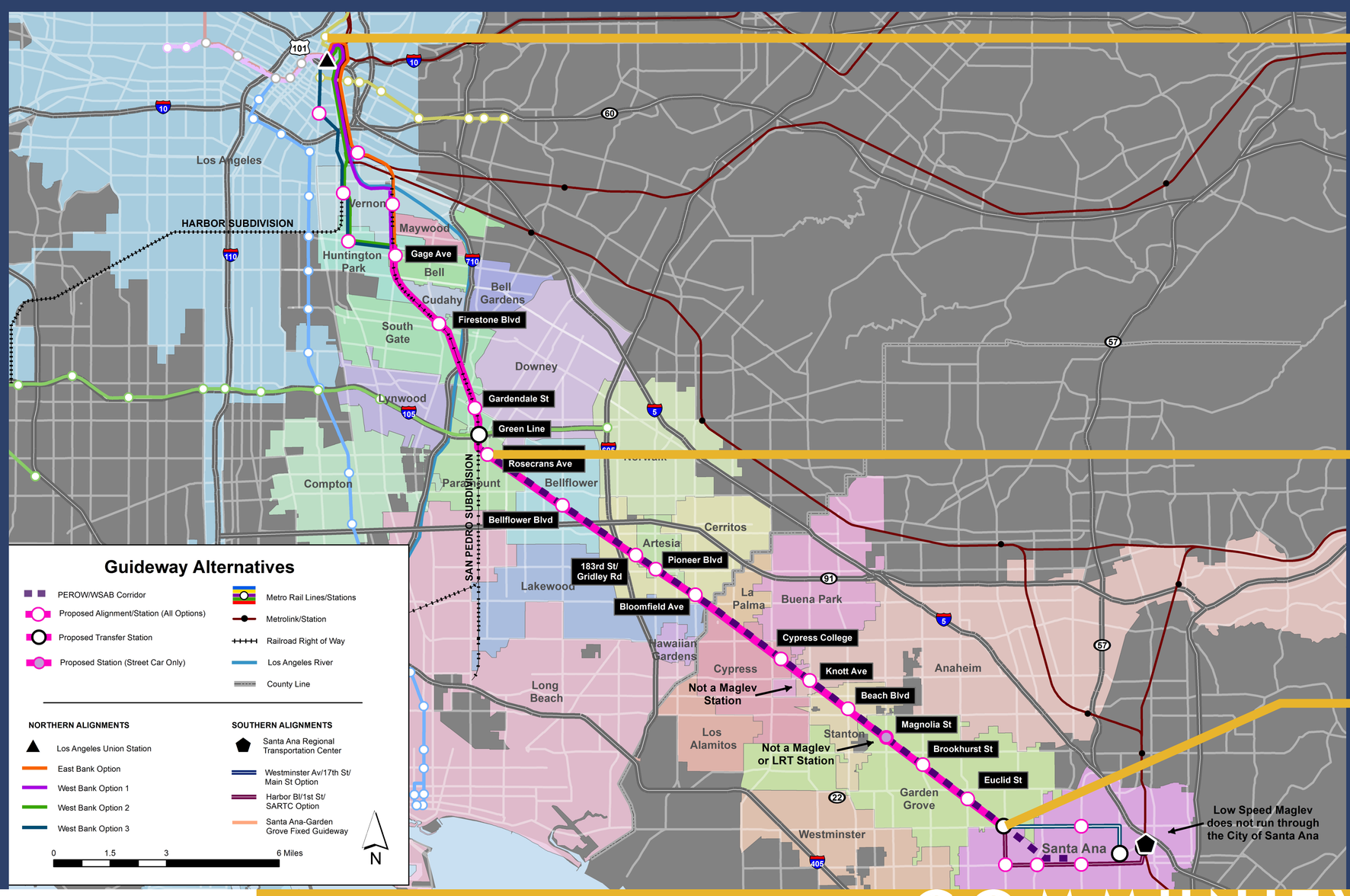
Similar to future Santa Ana-Garden Grove Street Car System

LIGHT RAIL TRANSIT

Similar to Metro Blue and Gold Lines and Exposition Line

LOW SPEED MAGLEV

Similar to Linimo System in Nagoya, Japan



NORTHERN CONNECTION AREA

- Union Station to Metro Green Line
- Four alignment options

PEROW / WSAB AREA

- Metro Green Line to Harbor Boulevard
- One alignment option

SOUTHERN CONNECTION AREA

- Harbor Boulevard to Santa Ana RTC
- Two alignment options

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10 ALIGNMENT ALTERNATIVES

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

NORTHERN CONNECTION AREA

EAST BANK 1

- A Metro-owned/Metrolink-operated right-of-way (ROW)
- B UPRR-owned right-of-way
- C Ports of Long Beach and Los Angeles-owned San Pedro Subdivision

WEST BANK 1

- A Metro-owned/Metrolink-operated ROW
- B Edge of west bank of Los Angeles River
- C Ports of Long Beach and Los Angeles-owned San Pedro Subdivision

WEST BANK 2

- A Metro-owned/Metrolink-operated ROW
- B Metro-owned Harbor Subdivision
- C Median of city street (former street car alignment)
- D Median of Randolph Street (UPRR-owned)

WEST BANK 3

- A Under/over city streets and under public/private property
- B Metro-owned Harbor Subdivision
- C Median of city street (former street car alignment)
- D Median of Randolph Street (UPRR-owned)

- Above Grade
- At-Grade
- Below Grade

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11 ALIGNMENT ALTERNATIVES

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PEROW/WSAB AREA

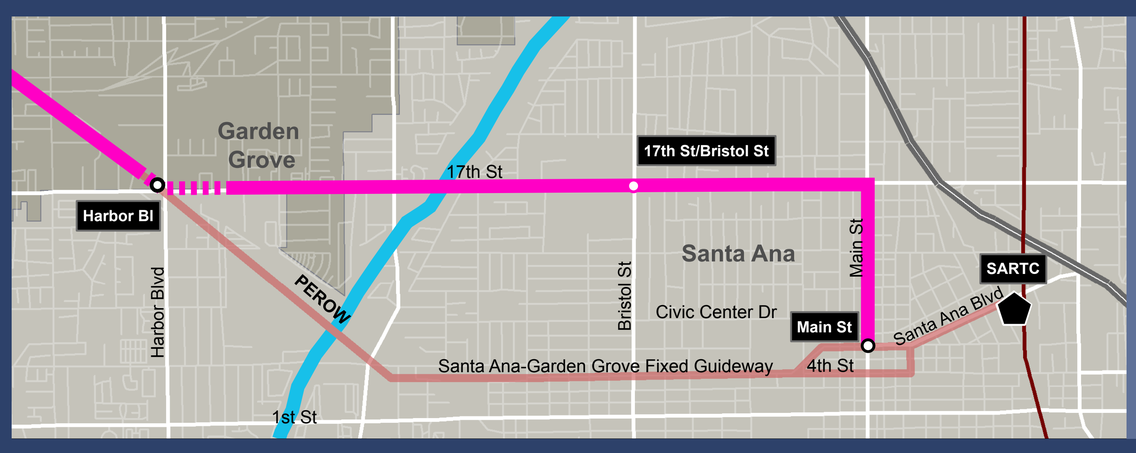
Metro Green Line-Harbor Boulevard Station

- Dedicated operations in center of PEROW/ WSAB ROW
- Harbor Boulevard Station interface with future Santa Ana-Garden Grove Street Car Project
- Low Speed Maglev Alternative ends at Harbor Boulevard Station with a transfer required to reach Santa Ana RTC

SOUTHERN CONNECTION AREA

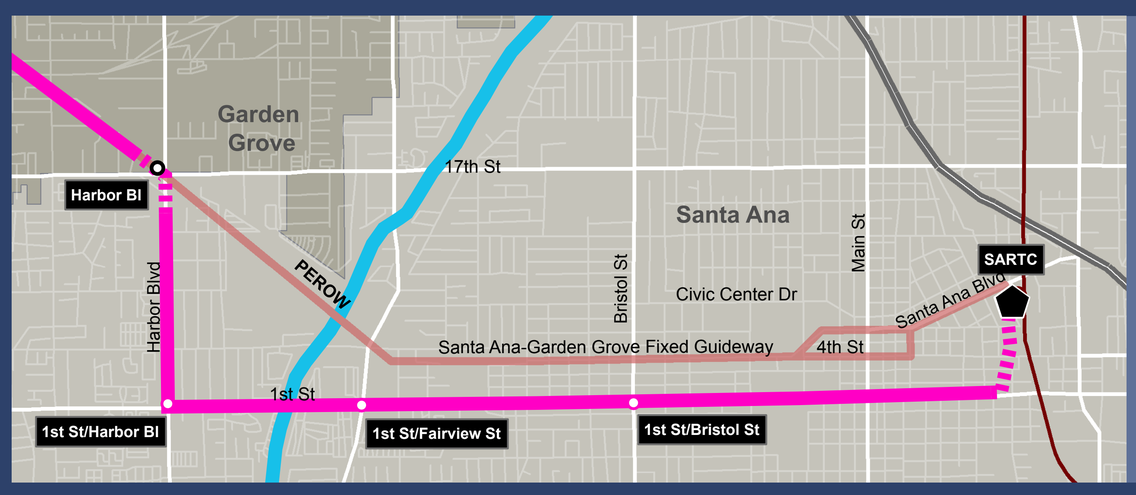
Harbor Boulevard Station-Santa Ana RTC

- Two alignment options in City of Santa Ana for Street Car and LRT Alternatives
- Median of city streets



Westminster Boulevard/17th Street/Main Street

- Serves Santa Ana Community College and Civic Center
- Requires transfer at Main Street Station to future Santa Ana-Garden Grove Street Car Project to reach Santa Ana RTC



Harbor Boulevard/1st Street/Santa Ana RTC

- Serves Santa Ana civic center, downtown, and Station District
- Provides direct connection to Santa Ana RTC

At-grade Configuration ——— Aerial Configuration - - - -

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12 ALTERNATIVE DEFINITION

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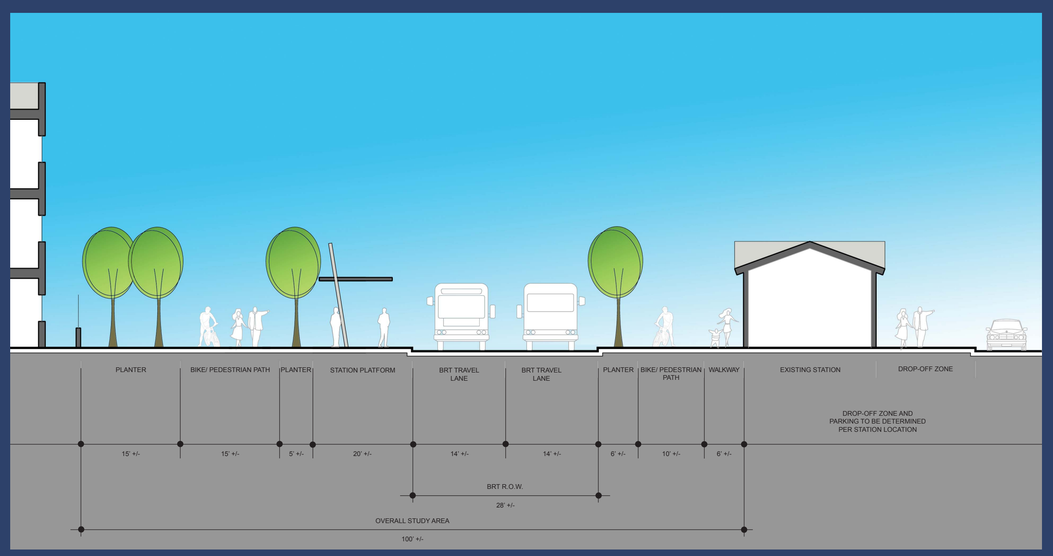
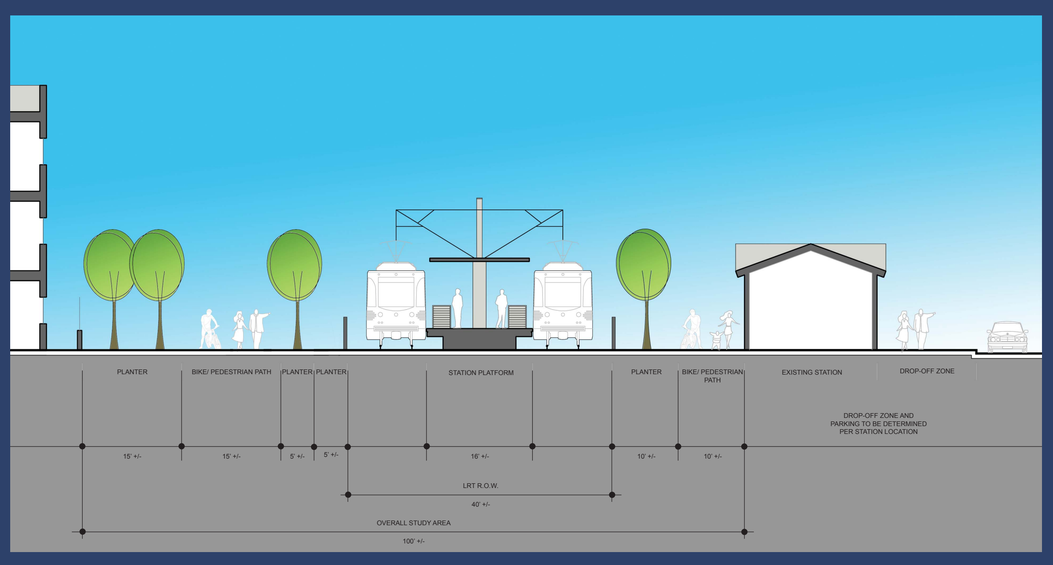
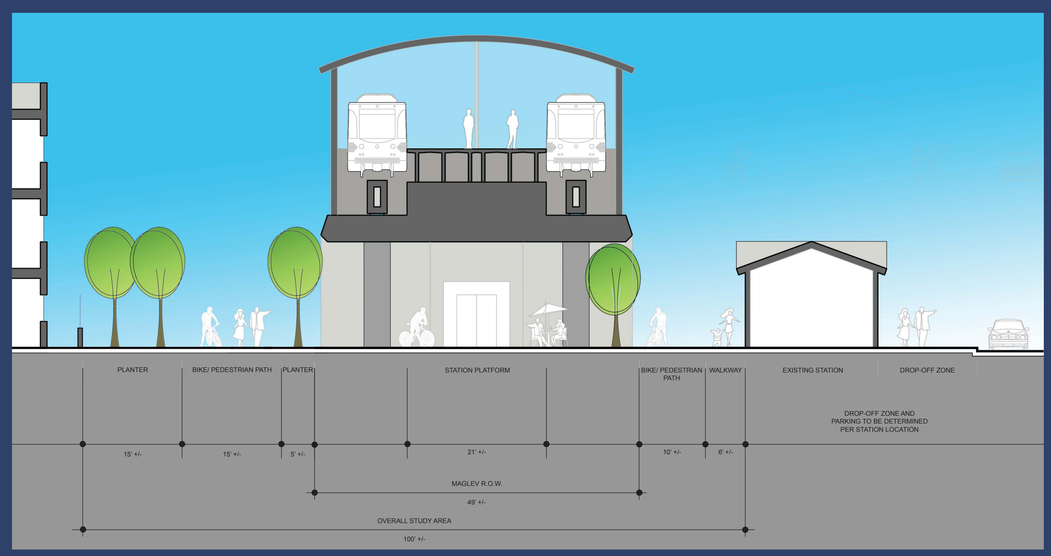


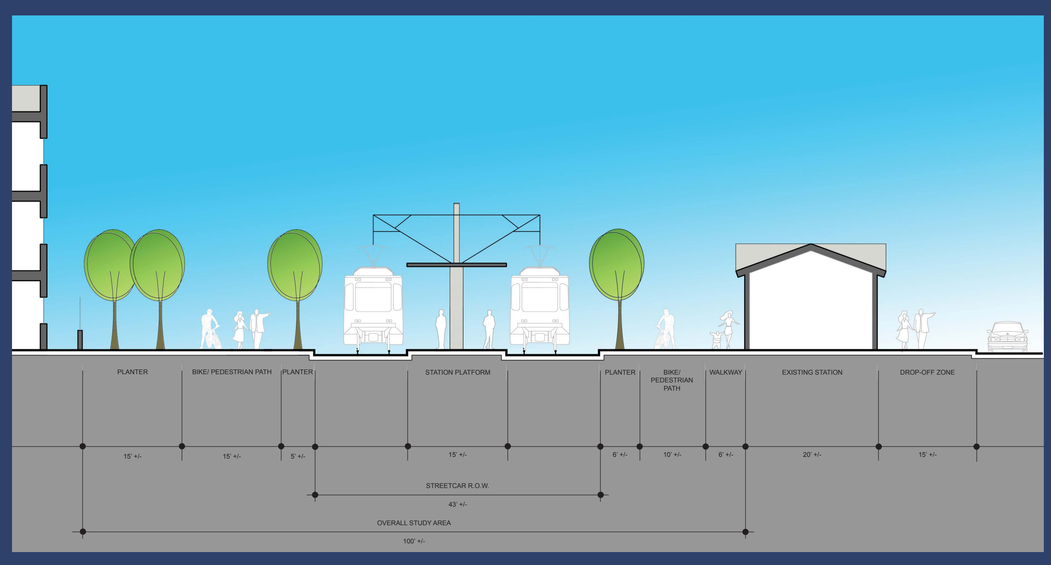
BRT – At grade



STREET CAR and LRT – Combination of at-grade and grade-separated (aerial and subway sections). Typical at-grade section shown.



LOW SPEED MAGLEV – Entirely grade-separated



STREET CAR and LRT – Combination of at-grade and grade-separated (aerial and subway sections). Typical at-grade section shown.

OVERVIEW OF ALTERNATIVES

Definition of the alternatives varies by alignment option due to different alignment lengths in the Northern Connection Area; all of the alternatives assumed the Harbor Blvd./1st St./SARTC option in Santa Ana.

Alternative	Number of Stations	System[1] Length	Average Speed
BRT			
Street-Running	27	38.6	32.4 mph
HOV-Running	22	40.9	32.6 mph
Street Car			
West Bank 3	24	34.5	31.1 mph
LRT			
West Bank 3	23	34.5	35.5 mph
Low Speed Maglev[2]			
West Bank 3	18	29.2	40.2 mph

1. Represents the Harbor Boulevard/1st Street/SARTC Alternative in the Southern Connection Area
2. Low Speed Maglev Alternative ends at Harbor Boulevard; does not continue through Santa Ana

STATIONS – Locations identified in city work sessions

SYSTEM LENGTH – Varies by modal option and alignment length

AVERAGE SPEED – Based on end-to-end travel for each alternative:

BRT HOV Lane-Running Alternative – 7th/Metro Center to SARTC
BRT Street-Running Alternative – Union Station to SARTC
Street Car and LRT Alternatives – Union Station to SARTC
Low Speed Maglev Alternatives – Union Station to Harbor Blvd. Station

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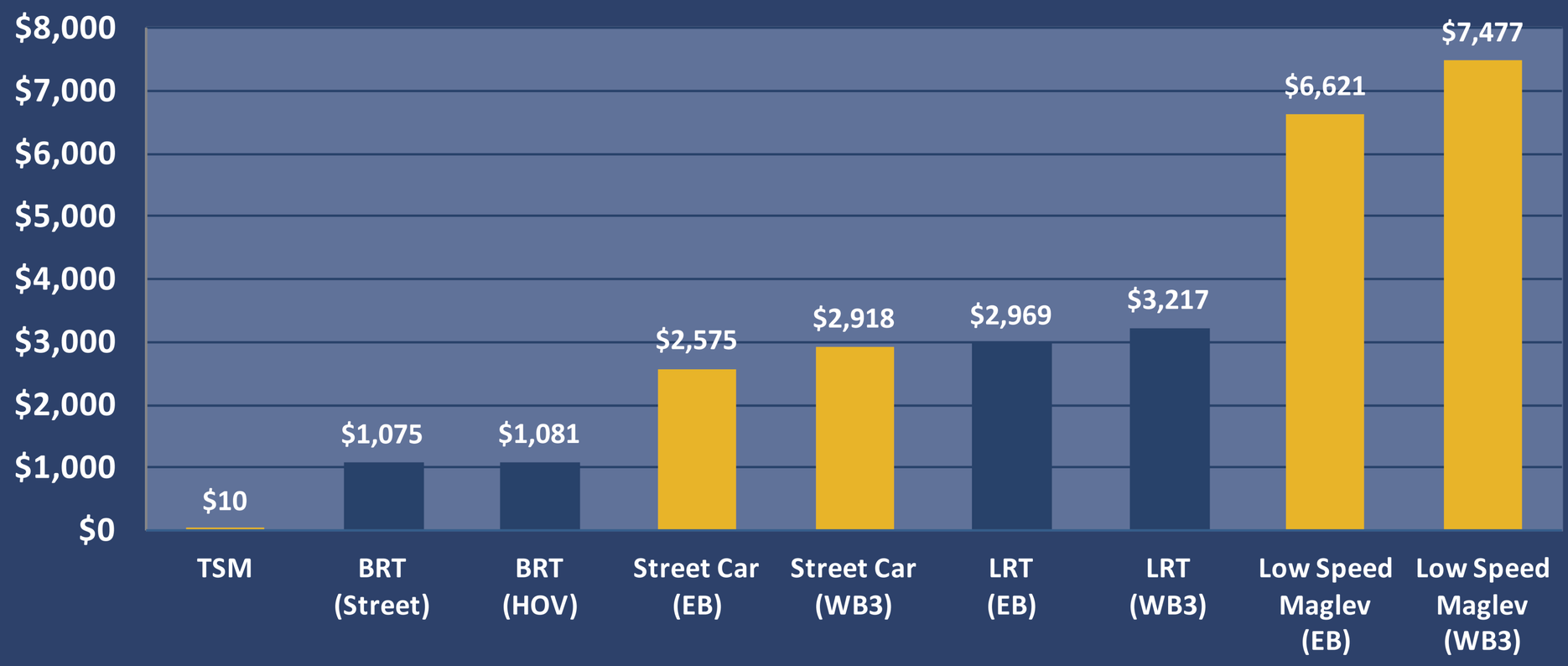
COST TO BUILD

The total project cost to build includes:

- Bus feeder services (TSM Alternative)
- Buses or trains
- Storage and maintenance yard facility
- Construction costs

Cost to Build ($millions)



CAPITAL COST BREAKDOWN BY COUNTY

Approximately 60 percent of the project length is in Los Angeles County, but the county-based cost varies per alternative:

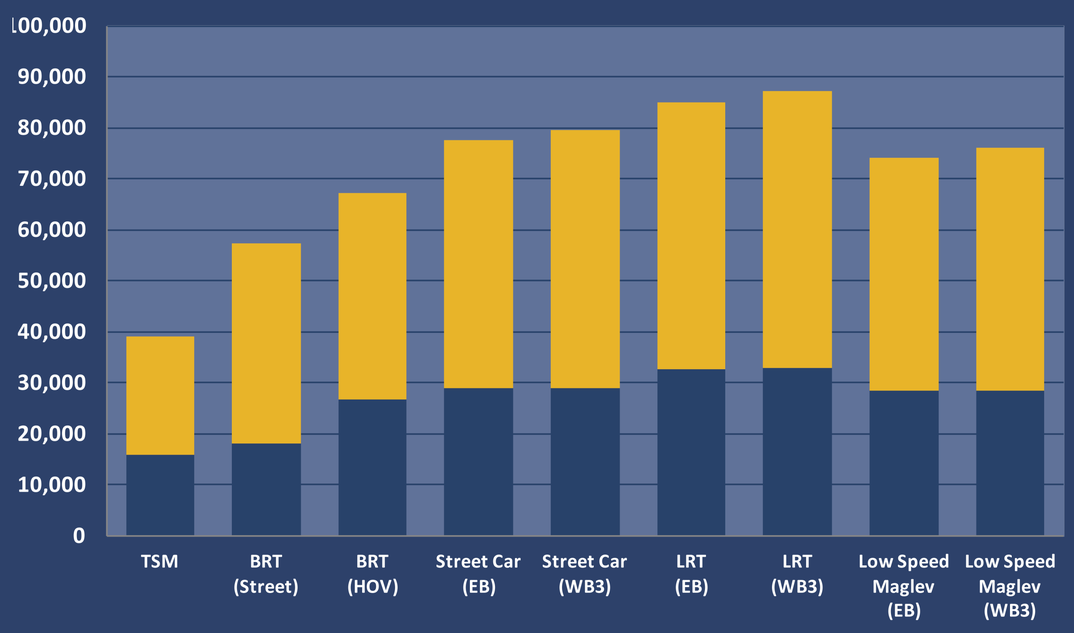
- TSM higher in Orange County due to larger set of improvements
- BRT – majority of cost is related to use of PEROW/WSAB ROW with more of ROW located in Orange County
- Street Car and LRT – higher costs for Los Angeles County are related to a more complex system between Union Station-Metro Green Line
- Low Speed Maglev – majority of alignment is in Los Angeles County as alignment does not continue through Santa Ana

Modal Alignment Alternative	Los Angeles County Cost (Millions)	Los Angeles County Portion (Percent)	Orange County Project Cost (Millions)	Orange County Portion (Percent)	Total Project Capital Cost (Millions)
TSM					
Core Service Project	$5.2	53%	$4.7	47%	$9.9
BRT Alternatives					
Street-Running	$466.8	43%	$608.4	57%	$1,075.2
HOV Lane-Running	$473.2	44%	$608.4	56%	$1,081.6
Street Car Alternatives					
East Bank	$1,757.3	68%	$817.4	32%	$2,574.7
West Bank 3	$2,100.7	72%	$817.4	28%	$2,918.1
LRT Alternatives					
East Bank	$1,984.3	67%	$984.9	33%	$2,969.2
West Bank 3	$2,231.6	69%	$984.9	31%	$3,216.5
Low Speed Maglev Alternatives					
East Bank	$4,662.2	70%	$1,958.5	30%	$6,620.7
West Bank 3	$5,518.2	74%	$1,958.5	26%	$7,476.7

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

PROJECTED DAILY RIDERSHIP (2035)

NOTE: Blue portion of each bar represents new transit riders



OVERVIEW OF SYSTEM CAPACITY

This table provides an overview of the passenger capacity provided by each of the alternatives based on:

- Conceptual 10 minute service for 18 hours a day
- Final service plans would include a combination of 5, 15, 20 and/or 30 minute service frequency

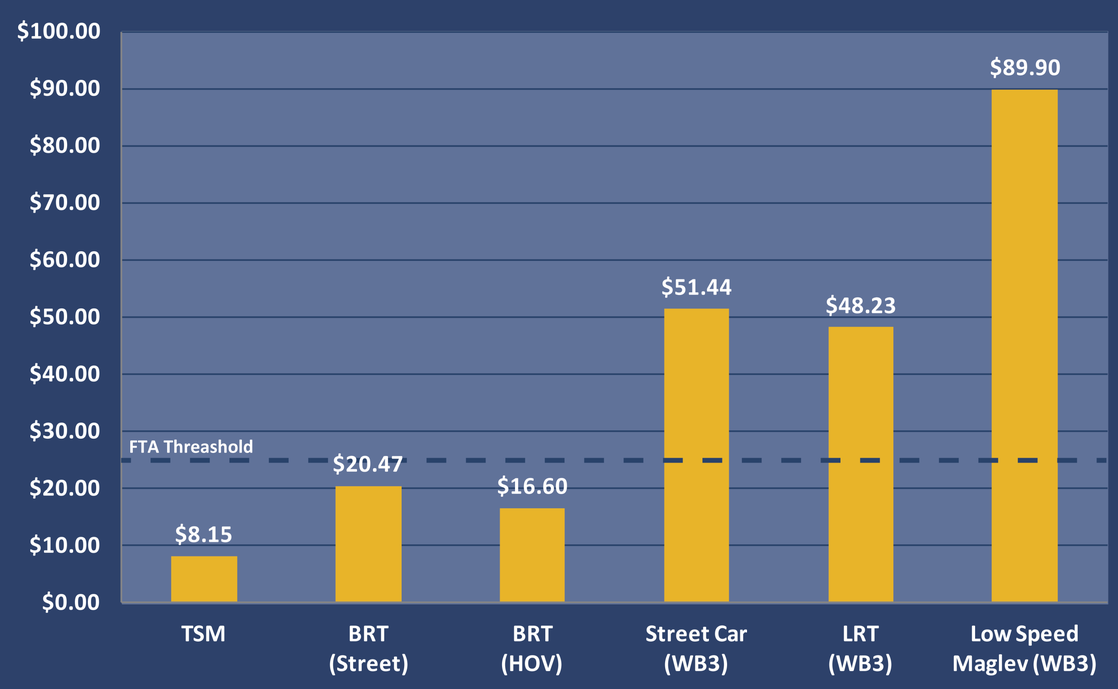
		Total Vehicle Capacity	Total Daily[1,2] 2 Dir
BRT	45' NABI	57	12,312
	60' NABI	74	15,984
Street Car	S70 Street Car[3] (Single Car)	105[4]	22,680
LRT	Breda P2550 (3-Car Train)	400	86,400
Low Speed Maglev	Linimo System (3-Car Train)	248	53,568

1. Based on 6 vehicles per service hour in each direction; total daily capacity based on service in both directions
2. Based on 18 hours of service from 6:00 AM – 12:00 Midnight; actual span of service would vary by mode and operating needs
3. Based on Siemens vehicle being considered for Santa Ana-Garden Grove Fixed Guideway project
4. Total capacity is identified as 195 passengers; Metro's LRT Load factor is 1.75 x 60 = 105 passengers.

COST-EFFECTIVENESS

The Cost-Effectiveness Index (CEI) compares the cost of constructing and operating each alternative compared to the ridership it attracts and serves

A CEI of under $25 is the goal when seeking federal funding



PACIFIC ELECTRIC CORRIDOR

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15 ENVIRONMENTAL ASSESSMENT

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ENVIRONMENTAL IMPACTS

	TSM	BRT	Street Car	LRT	Low Speed Maglev
Traffic	Major	Major	Major	Major	Minor
Visual and Aesthetics	Minor	Minor	Medium	Medium	Major
Noise and Vibration	Minor	Minor	Medium	Major	Minor
Air Quality and Climate Change	Impact	Impact	Benefit	Benefit	Benefit
Parks/Cultural/Historic Resources	Minor	Minor	Minor	Minor	Major
Property Acquisition	Minor	Medium	Medium	Medium	Major

Benefit – Implementation of alternative would have positive environmental benefits
Alternative would have impacts:
Minor – Impacts that may not be noticeable
Medium – Impact could be mitigated to a minor level
Major – Impacts are significant; some could be mitigated to reduce their impact, while others such as property acquisition could not

TRAFFIC

- TSM and BRT Alternatives have major impacts due to increased number of buses operating on streets and highways
- Street Car and LRT Alternatives have major impacts on street capacity and operations; may be mitigated to medium
- Low Speed Maglev has minor impacts due to column placement

VISUAL & AESTHETICS

- TSM and BRT have minor impacts to community visual quality
- Street Car and LRT have medium impacts due to overhead wires
- Low Speed Maglev has significant impacts due to aerial structure

NOISE & VIBRATION

- TSM and BRT has minor impacts due to rubber-tired vehicles
- Street Car and LRT have impacts due to steel wheel on steel rail operations; Street Car has less impact due to lighter vehicles; LRT impacts may be reduced with construction and operational techniques
- Low Speed Maglev has minor impacts due to air cushion on concrete guideway

AIR QUALITY & CLIMATE CHANGE

- TSM and BRT have impacts due to increased congestion resulting from adding buses to highway system
- Street Car, LRT and Low Speed Maglev have benefits due to reduced car usage and electrical operations

PARKS/ CULTURAL/ HISTORIC RESOURCES

- TSM and BRT have minor impacts due to at-grade operations on street system
- Street Car and LRT have minor impacts along at-grade operational segments
- Low Speed Maglev has major impacts due to aerial structure impacts on parks and cultural/ historic resources

PROPERTY ACQUISITION

- TSM and BRT have minor impacts due to less than 15 properties required for a new storage and maintenance facility
- Street Car and LRT have a medium impact due to 15-20 properties required for a new storage and maintenance facility and to accommodate alignment curves
- Low Speed Maglev has a major impact due to 50-70 properties required for a new storage and maintenance facility and to accommodate the wider curves required by this mode

COMMUNITY OUTREACH

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16 AA STUDY RESULTS

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ASSOCIATION of GOVERNMENTS

ALTERNATIVE RESULTS

Alternative	Opportunities	Challenges
All Modes	Increase Corridor transit ridership, attract new riders	
BRT	• Lowest Initial Capital Cost • Best Cost Effectiveness Index (CEI)	• 2035 ridership exceeds system capacity • Operates on congested highway system resulting in traffic and air quality/climate change impacts • Lack of community and city support
Street Car	• Lighter, quieter vehicle than LRT • Could operate on future Santa Ana-Garden Grove Fixed Guideway Street Car System • Best Cost-Effectiveness Index of guideway alternatives	• Fatal flaws: • Must be operated as single cars, while forecasted ridership requires three-car trains • Vehicle seating does not serve Corridor trip type; has more standee space, fewer seats • Similar Cost to LRT without providing system capacity •No local operator experience; requires new staff/facilities
LRT	• Highest Ridership • Second highest average operating speed (35.2 mph) • Fastest end-to-end travel time • Can operate on Metro LRT system	• High Capital Cost ($3.0-3.2 Billion) • Traffic, noise and vibration impacts
Low Speed Maglev	• Highest average operating speed (40.1 mph) • Fastest travel time • Lowest operating and maintenance cost • Lowest level of noise, vibration and traffic impacts	• Highest Capital Cost ($6.6-7.5 Billion) • Significant property acquisition (50-70 properties) • Visual/aesthetic impacts and possible environmental impacts •No local operator experience; requires new staff/f acilites • No U.S. system – lengthy/costly approval process

COMMUNITY OUTREACH

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17 NEXT STEPS

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

PROJECT SCHEDULE

Community Meetings seeking public and stakeholder input on final recommendations — May 15-24

Advisory Committees identifying final recommendations

Technical Advisory Committee	June 12
Steering Committee	June 20

SCAG Regional Council Action — Fall 2012

Forwarded to Metro and OCTA for Board consideration:

OCTA Board action — Fall/Winter 2012

Metro Board action — Winter 2012/13

For more information or to comment on this study:

- Please visit the project website at www.pacificelectriccorridor.com
- Call, email, or write Philip Law, SCAG Project Manager:
  (213) 236-1841, law@scag.ca.gov, and
  SCAG, 818 West 7th Street, 12th Floor, Los Angeles, CA 90017

COMMUNITY OUTREACH

PACIFIC ELECTRIC CORRIDOR

WEST SANTA ANA BRANCH